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## RAILWAY SIGNALMEN.

THE public seldom come in contact with this class of men. They know them, however, from seeing them in their box, or more often looking out of their windows, intently gazing into all the carriages as they pass. The eye of the signalman gets so used to watching a train in motion that he can generally tell if there are any inspectors or other officers travelling in them; and should there be one, the fact is soon sent on ahead. The 'cute, officious, or disagreeable officials generally have a nickname, and the notice will then be telegraphed thus: 'Shark on the line.' 'Bear 11.15 hence.' 'Bull in rear carriage.' A certain signal inspector once, however, got into a box ahead before the message came, and while he was there it was being received, and being able to read the instrument, he took the message himself, which ran: 'Old Butterhead is about.' He then replied to it thus: 'And will be with you next up-train.' Arriving at the signal-box whence the message was sent, he said: 'You see Old Butterhead is here; and he fines you a shilling for using the telegraph instrument for other than Company's business.'

Signalmen have to spend from eight to twelve hours in their boxes at a time, and are supposed never to leave it while on duty. Some of the country boxes are very cheerful, especially where the men are fond of flowers; for there is often plenty of room for two or three dozen pots of plants, and in the winter there is a fire burning night and day, so that with a little care they can be kept thriving till the spring. A table, a chair, a stool, and a fixed desk constitute the furniture of the place. A row of levers kept beautifully bright adds to the cheerfulness of the sparsely-furnished chamber. Telegraph instruments and dials showing whether the line is blocked or clear are decidedly ornaments. Here, then, lives the man so many hours a day; and in a busy place he must work hard. The pulling of some of the levers is no child's play; and when this part of his work is done a hundred and fifty times in

eight, ten, or twelve hours, and all the trains have to be booked, besides signalling the trains forward, one can imagine that when his day's work is finished the signalman is tired out. I know one box which would not be considered a busy one where at times the man on night duty has not had time to eat a meal without having to get up from it constantly. During the day, in busy boxes there is a lad who does the telegraphing, but at night the signalman has to do it all himself.

There is a vast difference in the system of signalling to-day from that of twenty years ago; mechanical science has made such strides, that the whole business of signalling is done by machinery, worked by a man, but so interlocked that in some cases he could not cause an accident if he would. Carelessness and forgetfulness are the only causes of accidents now, so far as signalmen are concerned. But though they are assisted so much by every contrivance to ensure safety, yet the signalman should be a man of nerve, with a cool head and a steady hand, for, when an accident does take place, much depends upon his judgment whether the effect may be intensified. He then has to stop all trains, by using the telegraph; to inform his superior officers; and on their arrival, to act as a telegraph clerk. This may seem nothing; but with a train wrecked within sight, and groans of the injured within hearing, it requires an immense amount of coolness to do that work properly.

Knowing as they do their important and responsible position, they have banded themselves together in a very strong union, and of all classes of railway servants they are the most given to grumbling. They have received more consideration from their directors than any other class, and some years back their discontent threatened to result in a strike. I believe the date was even fixed when they should all leave their work. But the executive of the different railways had foreseen this, and if it had come to pass, they were prepared to place a man in every box competent enough to let the traffic continue, though with much more delay. Fortunately for both

the signalmen and the public, this did not then take place. A strike is only justified when men are unreasonably dealt with. Not even the success of a strike is a proof of its justification. Labour never has been and never will be victorious over capital; neither can capital compel labour; therefore, the only basis on which they can get on and agree is that of reasonableness towards one another. If some of the men have cause to complain of very hard work, some can also grumble at not having enough to do. In the latter case they often fill up their time at wood-carving, fret-work, bird-cage making, and such-like employment, and get very skillful at it; but the silent monotony of such a signal-box as there is at Ribbleshead must be worse than overwork. Few men stop there willingly; and I believe it has been made a sort of House of Correction for troublesome men till the last few years. A native is now stationed there, and is happy, much to the joy of those who have been and might be there again.

The signalman has been called the 'lighthouse-man of the iron road,' and that is exactly what he is; but he has a more pleasant life. The solitude of the lighthouse, and the vast expanse of sea around, with occasional storms of such violence as can scarcely be imagined by the landsman, irrespective of all deeds of daring and bravery, will ever make the calling of the lighthouse keeper a romantic one. But there is no romance in railway life, and the novelist who should endeavour to make it so will be well patronised if he succeed. The feelings of the signalman and lighthouse keeper must be alike when the one sees a train bounding on to destruction, and the other sees a ship coming straight on to some dangerous rocks. They both will hear the cries of the injured and dying; they both will see mangled bodies lying about, and they both have to put their wits to work to help the sufferers. A thunderstorm at sea as seen from a lighthouse is an awful sight; but from what I have heard from signalmen in exposed positions, I am inclined to believe that it is more awful in a signal-box. The lightning flashing about the levers, the loud cracking reports of the telegraph instrument, which emits sparks of fire, and no one near to speak to, has unnerved for life more than one signalman. It is bravery and a sense of duty that makes a man in that position stick to his post and continue his signalling work. That, as a body, they are mindful of the safety of the public, is proved by the following fact. At a certain signal-box the signals were seen to be clear for an up and a down train to pass; but before the trains came up, all the signals were observed to be at danger. The trains were brought to a standstill; but no signalman was seen in the box. The guard went up to it, and saw the signalman lying dead on the floor. He must have felt that he was dying; and thinking of the safety of the trains, he pulled the levers to danger with his last strength and fell dead.

Signalmen are not allowed to have strangers in their boxes, nor other servants of the company except on business. That they often do so, the public are well aware; but they may not know that the men so offending are heavily fined. The tiresome monotony of eight or ten hours' working without any company is certainly a great temp-

tation for them to break the rule. The reason for the order is similar to the one on board ship which says, 'Do not talk to the man at the wheel.'

Most signalmen have been porters, and when they have learned the telegraph, are competent to take charge of a box. When, however, a man with little or no experience is to be made a signalman, he has to go through a course of instruction which will occupy him a month or so according to his capabilities. Some are very slow in learning, and some have to be given up entirely. Such a one was a man from the plough, who every time that the inspector examined him as to what he should do under certain circumstances replied, 'I am sure I don't know.' This went on week after week, till the inspector's patience was getting tired out, and he was told that he would have one more chance. The day came, and a question as usual was put to him, and he gave the same old reply. 'Well, one more question,' said the inspector. 'Supposing an express train passed this box while your signals were at danger, got off the line, and ploughed into those fields yonder, what should you do?' The man scratched his head and replied, 'I should let the darned thing go, and give "line clear."' His case was hopeless.

Signalmen are generally divided into three classes. The first-class men are those at large stations and important junctions, such as Doncaster, Crewe, and Carlisle; the second class at smaller stations; and the third at roadside stations and block boxes. The last are boxes placed between two stations which are some miles apart, so as to shorten the block. Signal-boxes are seldom more than three miles apart.

The men are allowed a uniform, and similar privileges as are given to porters. Their wages vary according to the class they are in, and are about equal to skilled mechanics. Some lines give the men a half-yearly bonus of twenty or thirty shillings if they have not been fined above a certain amount during the year. They have a great deal of responsibility; but they have shown themselves equal to it. They are eligible for promotion, and many become inspectors and station-masters in places where there is a great deal of outdoor work. Their position, therefore, may, taking all things into consideration, be considered a comfortable one.

## DUMARESQ'S DAUGHTER.

### CHAPTER XI.—FOOL'S PARADISE.

HAVILAND DUMARESQ, left to himself in the garden, paced up and down the narrow gravel walk, and turned over in his mind all these things seriously. Could it be that Mrs Maitland was right after all? Was the painter man really coming after Psyche?

Women are lynx-eyed in matters of emotional expression, he reflected to himself in his generalising way: in that, they resemble savages and the lower animals. Yes, and women of the inferior intellectual grades, like Mrs Maitland, are more lynx-eyed as a rule even than others: the lower the grade, the more developed the instinctive perceptive faculty. Their intuitions stand them in stead of reason. And such intui-

tions seldom err. No doubt she was right: no doubt she was right. The young man wanted to marry Psyche.

But in that case, what ought he himself, as a father, to do? The young man had probably neither money nor position.

In any other relation of life, indeed, Haviland Dumaresq would never have thought for one moment of inquiring about either of those adventitious circumstances. And he would have regarded their possession to a great extent as a positive disadvantage to the man who was cumbered with them. Money, he would have said, was a bar to exertion: position was antagonistic to wide human sympathies. Those men best know the universe in which they live, those men best love their kind and all other kinds, who earn their own bread by the sweat of their brow, and who have felt the keen spur and common bond of hunger. So, as recommendations to a man in the abstract, poverty and insignificance were far more important in Haviland Dumaresq's mind than money and position.

But where Psyche was concerned, things seemed quite otherwise. The old philosopher had wasted his own life in the way he liked best, in obedience to the imperious demands of his own inmost and highest nature; but he wasn't going to let that beautiful girl of his waste hers in the same foolish spendthrift manner: she should profit, he whispered to himself fondly, by her father's hard and dearly-bought experience. For his own part, Haviland Dumaresq would not have taken from Charles Linnell a twenty-guinea picture; but for Psyche, he was ready to take from the first comer ten thousand a year, and a title, and a castle, and a place in the peerage, and anything else of vulgar estimation that the world, the mere wealthy commonplace world, could give him. He was prepared to debase himself to Mrs Maitland's level.

A twenty-guinea picture, indeed! The young man seemed to ask twenty guineas for it as if money were water. Nay, he seemed actually to be putting his price very low, as a matter of friendship to a special purchaser—and if so, Haviland Dumaresq felt he ought certainly to resent the uncalled-for liberty, for what right had the fellow to presume upon doing him a favour when he didn't even so much as wish it? But, setting that aside, and thinking only of Psyche, if the young man could really get twenty guineas—or more—for a mere casual water-colour sketch, mightn't the matter be worth inquiring into, after all? Mightn't he be a rising and well-to-do artist? Haviland Dumaresq hated himself for the unworthy thought; but for Psyche's sake he must hunt up something about this twenty-guinea painter fellow.

After all, painters are often somebodies—even as the world judges, often somebodies. A painter—Heaven forgive him for so low a point of view of an ennobling art—a painter may rise to be P.R.A. at last, and gain a knighthood, and be petted and admired, and earn lots of money, and lose his own soul—whatever was highest and purest and best within him—and make his wife be called My Lady, and give her all that money can buy of place and pleasure, and drive her out in the Park in a carriage with footmen, and take her to Court, like an African savage, bedizened

with powder and paint and ostrich feathers.—Pah! the lowness, the meanness, the vulgarity, the barbarism of it!—But for Psyche!—A painter may often be a really rich man. Why, yes, he was really and truly sinking to the abject level of a Mrs Maitland.

Mrs Maitland! An idea! The note! The note! What made Mrs Maitland angry about Psyche? Not merely because Psyche had got an admirer. Clearly, she must have thought that Psyche was setting her cap—as she would call it in her own hideous match-making dialect—at this twenty-guinea painter fellow. But if so, that meant, as Haviland Dumaresq instinctively knew, that Mrs Maitland wanted the painter fellow herself for Geraldine. And surely Mrs Maitland wouldn't want the young man unless she was sure he was a good investment. The Maitlands lived up to the very last penny of the General's pay and the very last farthing of Mrs Maitland's small fortune. The boys were expensive: one in the army; two at Sandhurst or Marlborough; and one who, as his mother ingenuously observed, had 'failed for everything,' and must now be shipped off to try his fortune in New Zealand or Manitoba. It was positively necessary, as the Maitlands would put it, that Geraldine should marry a man with money. And a man with money enough for Geraldine Maitland would presumably have money enough for his Psyche also.

Haviland Dumaresq paced up and down the garden walk, revolving these things long in his own troubled mind, turning them all over this way and that, and unable to arrive at any decision about them. At last, wearied out with his own anxious thought, he sat down on the bench under the gnarled old apple-tree, and taking from his waistcoat pocket that small cardboard box with the silver-coated pellets, raised one of them mechanically to his trembling lips to calm his nerves from the tempest that possessed them.

Psyche's happiness! Ay, Psyche's happiness! It was no less than Psyche's happiness that was at stake. And to Haviland Dumaresq, now that the Encyclopædic Philosophy was well off his hands, and launched upon posterity, the universe consisted mainly of Psyche. Talk about the anthropocentric fallacy indeed! Who had done more to dispel that illusion than Haviland Dumaresq? Who had shown more clearly than he that instead of the universe revolving about man as its fixed point and centre, man was but a single unimportant species, on the wrinkled surface of an unimportant satellite, attached by gravity to an unimportant sun; the final product of arrested radiant energy on the outer crust of an insignificant speck in boundless space? And yet, when it came to the actual internal world, was it not also a fact that for Haviland Dumaresq the central point in all the universe was Psyche, Psyche, Psyche, Psyche? and that around her as primary all the suns and constellations circled in their orbits like obedient servants? Was it not for her that the cosmos itself loosed the bands of Orion and shed the sweet influences of the Pleiades through long leagues of space upon her nightly dreams?

He was roused from his reverie by a footstep on the gravel path outside: not the foot-

step of a labourer slouching by to work on the allotments beyond: Haviland Dumaresq, in his inferential fashion, knew it at once for the firm and even tread of a gentleman. The Loamshire hinds loiter about like the half-emancipated serfs they still are, he said to himself quietly: this is the step of a freeman born, who walks the soil of England as if it belonged to him. And sure enough, raising his eyes across the hedge, he saw before him Reginald Mansel.

'Ha, Mansel,' he cried, beckoning his painter neighbour to turn aside into the garden, 'this is luck indeed. Coincidence seldom comes so pat. You're the very man I wanted to see. I've made my first appearance on this or any other stage as an art-patron to-day, and I'd like you to come and judge of my purchase. What do you say to this now?' And he held up the water-colour, which lay beside him still on the rustic seat, for Mansel's critical and professional opinion.

The artist glanced at it with a smile of recognition. 'What, Linnell's?' he cried. 'Oh, I saw it earlier. I've watched it along through all its stages. It's a very good sketch, very good indeed. He never did better, to my mind, with an English subject. Not over-elaborated with those finikin touches which often spoil Linnell's best work. It's a perfect little idyll in green and ultramarine.' And he eyed it appreciatively.

'You like it then?' Dumaresq asked in a curious tone.

'Like it? Well, of course. One can't help liking everything of Linnell's. He has the true touch of genius in all his work, if only he were a little bit less supremely self-conscious.'

'What do you think I gave for it?' the old man suggested, with his head on one side like a critical connoisseur.

'Gave for it?' Mansel repeated with an incredulous stare. 'You don't mean to say, then, Dumaresq, you've actually bought it?'

'Bought it and paid for it,' the philosopher answered, with something very like unphilosophic complacency, enjoying his hearer's obvious surprise. 'Ah, you didn't think I went in for pictures! Well, I don't as a rule: I leave those things to the great of this world. But, you see, as this was a special subject, of peculiar interest to myself and Psyche, I thought I couldn't let it fall to a mere stranger. I'd fix it at once: I'd keep it in the family. So I commissioned it beforehand, I think you call it; and when Linnell came round this afternoon I paid him his price and 'gi'ed it in hond,' like the Northern Farmer.—How much should you say, now, I ought to have spent upon it?'

Mansel regarded first the picture and then the philosopher in hesitating silence for a few seconds. 'Well,' he said irresolutely, after an awkward pause, 'I don't know, of course, what Linnell's likely to have put it at for you; no doubt he let you have it a little cheaper; but the picture as a picture's worth fifty guineas.'

'Fifty guineas!' Dumaresq echoed in dismayed astonishment.

'Yes, fifty guineas,' Mansel answered quietly. 'Linnell commands his market, you know. He could get that for it any day in London.'

Haviland Dumaresq's gray eyes flashed sudden

fire. His first thought was that Linnell had been guilty of rank disrespect to his person and position in letting him have a fifty-guinea picture at considerably less than half-price. Poor he might be—he had sat up half last night, indeed, toiling like a galley-slave at that penny-a-line article on the Conservation of Energy for his hard-earned 'honorarium,' as no doubt his publishers grandiloquently termed it—but what right had a painter fellow whom he'd hardly even seen in his life yet, to lower prices for him, like a beggarly skintint, or to take it for granted he couldn't with ease, from the plenitude of his wealth, spare fifty guineas?

His second thought was that a man who could earn fifty guineas 'any day in London' for a bit of a water-colour no bigger than a page of the *Athenæum*, might perhaps after all be able to make Psyche happy.

'That's a very large sum,' he said, drawing a long breath and looking hard at Mansel. 'Men of letters get nothing like that for their work, I'm afraid. But then, they don't have anything to sell which can minister to the selfish monopolist vanity of the rich and idle. No Manchester merchant can hang upon his walls a unique copy of "Paradise Lost" or a solitary exemplar of the "Novum Organum," and say to his friends after dinner with vulgar pride: "Look here, So-and-so, that's Milton's or Bacon's greatest work. I paid fifty thousand guineas down for that lot." Still, even so, I'm surprised to hear you painters earn your money so easily. Twenty guineas seemed to me in my ignorance a very big price indeed, to pay for it.'

'Oh, Linnell can get that readily enough,' Mansel answered with a short uneasy laugh. 'His oils he sells at good prices at Christie's. His water-colours are snapped up every year at the Institute. But then, you know, they take him a good bit of time. He's a slow worker, and doesn't get through many canvases in the course of a twelvemonth.'

'Now, how much do you suppose a painter of his sort ought to earn on an average per annum?' Dumaresq asked offhand, with too evident an assumption of easy carelessness. 'How would his income compare, for example, with an author's or a journalist's?'

'Well, I really can't say,' Mansel answered, smiling, and perceiving his questioner's drift at once. 'Perhaps some five or six hundred, all told; perhaps a thousand; perhaps more than that.—But then,' he added, his thoughts keeping pace all along with Dumaresq's, 'he may have private means of his own as well, you know. He spends freely. I've never known him pressed for cash. I don't think he lives altogether on his pictures.'

'No?' With keen interest.

'No; I should say not. I've always imagined he had means of his own. For one thing, he had plenty, I know, at Christ Church.'

'He was at Christ Church, was he?' Dumaresq put in reflectively. 'An expensive College. The most fashionable at Oxford. A man must have money who goes to Christ Church!'

'Not necessarily,' Mansel answered, putting him off the scent once more. 'I was there myself, you remember, and Heaven knows I



was poor enough in those days in all conscience. But then, I had a studentship of eighty pounds a year, which makes a difference, of course: whereas Linnell came up as an ordinary commoner.'

'And you think he has money then?' Dumaresq asked eagerly.

'I think so. But mind, I know nothing about it. Linnell was always the most reticent and mysterious of men, full of small reserves and petty mystifications. He never told anybody a word about himself. He's always been close, provokingly close. For aught I know, he may be as poor as a church mouse in reality; and for aught I know, again, he may be as rich as Croesus. So far as my observation goes, he always acts like a wealthy man, and talks like a poor one. But if anybody ever taxes him with opulence, he resents the imputation as a positive slight, and declares with effusion he's almost on the very verge of beggary.'

'Many rich men,' Dumaresq mused dreamily, 'are pursued with a peculiar form of mania called *timor paupertatis*, and what you say's just one of its recognised symptoms—that the sufferer never will admit his wealth, for fear other people should try to swindle him or rob him or beg of him. You may remember that in the fourth volume of the *Encyclopædic Philosophy*—the volume that deals with Heteropathic Affections in the Empirical Individual—I bring the phenomenon of concealment of wealth under the same law with the pseudomorphic corrugation of cooling nebule and the facts of mimicry in animal evolution. It's a most interesting branch of psychological study. I shall watch this young man. I shall watch him—I shall watch him.'

He spoke in a droning half-sleepy undertone; and Mansel, who had seen the great thinker more than once in this state before, and who always felt creepy at the strange look in his eyes, made haste to concoct some plausible excuse for a hurried departure. 'When Dumaresq gets into that curious vein,' he said to himself internally, 'philosopher or no philosopher, he's simply unendurable. From a man of singular intellect and genius, he dwindles down at once into a mere bore. All his brilliancy and ability seem to desert him, and he talks platitudes to you three times over in varying language, like the veriest old driveller at the Seniors in London. When these fits come upon him, the wise man will do well to leave him alone. He goes silly for the nonce: *hunc tu Romane caveto*.' And he walked off, whistling, to his own studio.

But Haviland Dumaresq, having learned all he wanted from Linnell's friend, strolled away by himself, regardless of lunch, upon the open downs, that overlook the sea with their bare green knolls and their deep curved hollows. He strolled along, crushing rich flowers under foot as he went, wrapped up in his own thoughts, and with the poison within him gaining deeper and deeper hold upon his swimming and reeling brain each moment. The sun shone high over the purple sea; the hills rolled boundless and undulating before him; the noise of the bell upon the foremost wether of the ruddled flock that cropped close grass in thecombe hard by rang distant in his ear like most delicious music. Birds sang; bees hummed; gorse crackled; grass-

hoppers chirped; the scent of wild thyme hung thick on the air. The opium was transforming earth into heaven for him. Space swelled, as it always swelled into infinite abysses for Haviland Dumaresq when the intoxicating drug had once taken full possession of his veins and fibres. The horizon spread boundless in vast perspective with its clear blue line against the pale gray sky; the shadows in the hollow combs lengthened and deepened into romantic gloom; the hills rose up in huge expansive throes and became as high mountains to his dilated vision. A white gull flapped its gleaming wings overhead: to Dumaresq it revealed itself as some monstrous albatross. His own stature even seemed to double itself as he stalked along the dividing line of open ridge, till he loomed in his own eyes larger than human on the bald and rounded crest of the gigantic hog's back. All nature assumed a more heroic cast: he walked no longer our prosaic world: each step appeared to carry him over illimitable space: he trod with Dante the broad floor of Paradise.

And wonderful vistas opened ahead for Psyche also. She, too, his darling, she, too, should be happy. This man who had come to woo her in disguise, he was rich, he was great, there was mystery about him. In his present ecstatic frame of mind, Haviland Dumaresq hugged and magnified the mystery. The poetic element in his nature, sternly repressed by the philosophic side in his saner moments, found free vent at times in the unnatural exaltation of narcotic excitement, and ran riot in wild day-dreams of impossible splendour. He had passed through the golden gate to-day. He saw his Psyche decked out in all the barbaric splendour of pearl and diamond that his soul despised: he saw her floating in silks and gauzy stuffs and laces: he saw her circling round in the giddy dance, one blaze of glory, in the glittering rooms and slippery halls that he hated and eschewed as surviving relics of savage and barbaric antisocial luxury. High-stepping grays whirled her along in state in a light and graceful carriage through thronged thoroughfares of over-wealthy fashion. Flunkeys, whom Haviland Dumaresq could have kicked with pleasure, bowed, door in servile hand, to see her take her seat on the padded cushions. Massive silver and Venetian glass and hideous marvels of cunning architecture in ice and sugar loaded the table at whose head she sat in dainty brocade or in shimmering satin. Money, money, money, money: the dross he despised, the pleasure he looked down upon, the vulgar aims and ends he himself had cast like dirt behind him—he dreamed them all for the daughter he loved, and was no longer ashamed: for Haviland Dumaresq the philosopher was dead within him now, and there remained for the moment but that shell or husk, Haviland Dumaresq, the incipient opium-eater. He had forgotten everything but the joy of his day-dream, and he stalked ever forward, more asleep than awake, yet walking on sturdily, with exalted nerves, towards the edge of the down, to the broad blue sea, that danced and gleamed with pearl and sapphire in the bright sunshine before him.

Suddenly, after walking on in a dreamy way for miles and miles over the springy turf, he hardly knew how, the old man found himself beside a clump of gorse, face to face with the mys-

terious painter fellow. He started at the sight. Linnell had come up to the downs, too, to walk off his chagrin, and to swallow as best he might his disappointment at not seeing Psyche.

Always sensitive, the young artist was more morbidly sensitive than usual where women were concerned. To say the truth, he had known but little of woman's society. Rich as he was and cultivated to the finger-ends, the circumstances of his life had thrown Linnell to an exceptionally small degree into contact with families. His world was a world of clubs and studios and men's lounging-places: so little had he seen of the other sex that he hardly felt himself at home even now in a lady's drawing-room.

This was not to be wondered at. His mother had died before he left America: at Oxford he had fallen in with none but college acquaintances: his English cousins refused to acknowledge him: and the Boston-bred lad, shy and ill at ease from his congenital lameness and strangeness of the novel surroundings in whose midst he was thrown, found himself cast at nineteen entirely on his own resources in the matter of gaining an introduction into our cold and austere English Society. It wasn't surprising, therefore, that he knew hardly any one except his brother-painters; or that he loved to escape from the vast blank of London life to the freedom and the space of the African desert. There at least he felt perfectly at home with the world: there no Bedouin ever trod on his social corns, no distracting matron ever strove to win him from his bohemian solitude to the irksome respectability of white ties or five-o'clock tea-tables.

So Linnell, perhaps, made a little more of a girl's fancy, as he thought it, than most other men of his age and position would have dreamed of doing. He had retired to the downs to brood over the supposed slight to his feelings in private; but a brisk walk upon the bracing turf, all alive with orchids and blue viper's bugloss, had almost succeeded in restoring him to equanimity again, when all at once a sudden turn into a smallcombe brought him up sharp, with unexpected abruptness, full in front of Haviland Dumaresq.

The old man gazed at him vacantly for a moment. His eyes were glazed and very hazy: they explored space for some seconds with a distant interest. Then, on a sudden, he seemed to wake up into life with a start, and recognising the painter with a burst of intuition, laid his hand with quite a kindly air upon Linnell's shoulder.

The gesture took the young man completely by surprise, for Dumaresq was one of those self-restrained, self-respecting natures whose strong sense of individuality in others assumes the form of an almost instinctive shrinking from anything that borders upon personal contact. Linnell looked the philosopher back in the face with a melting expression of mingled doubt and pleasure, as he hesitated slightly.

'I wanted to speak with you, Linnell,' Haviland Dumaresq began in a dreamy voice, motioning the young man over to a dry bank in the broad sunshine. 'I want, in point of fact, to apologise, or at least to explain to you. I'm

afraid I was perhaps a trifle brusque with you at my cottage this morning.—No; don't say I wasn't; I know I spoke sharply. Perhaps I even hurt your feelings. My training in life has not, I fear, been of a sort to encourage sensitiveness in myself, or to make me sympathise with it as much as I ought. I'm aware that I often err in that respect. But if I erred it was not through any personal intent, but under the influence of a strong impelling motive. I've been exercised in mind a good deal of late.—There's something, in short, I want to speak about to you.'

He went on still in a thick, half-dreamy wandering tone, and his dilated pupils seemed to fix themselves vaguely on a point in infinity; but he delivered his words with regularity and ease, though somewhat stiffly, and it was evident to Linnell that he was making a very strong effort to master himself for some great object, under the influence of some fierce overpowering emotion. The painter allowed the old man to lead him unresisting to the bank, and took his seat beside him with a beating heart, wondering what of good or evil for himself or Psyche this strange exordium might prove to forebode, and anxiously awaiting its further development. 'I wasn't at all annoyed, Mr Dumaresq,' he said in a low voice, perhaps not quite truthfully: 'only a little grieved that a man—well—whom I so much admired and respected as yourself should refuse to accept so small a present from me.'

'But it cost you a good deal of time and trouble,' Dumaresq answered slowly, in the same fixed mechanical far-away voice; 'and time is money, you know, Linnell; time is money. I shouldn't feel it right to occupy so much of a young man's time without making him what I thought an adequate repayment. You must forgive me that: it's a principle of mine: rather a sacrifice to my own ideas as to individuality than an act of unfriendliness toward any particular person.' Then he added suddenly in a very different tone: 'I'm an old man, you must remember; a worn-out old man. I've wasted my life in a hard service—the service of science, the service of humanity. Bear with me, bear with me, a little while, I beg of you. I'm an old, old man. There's not much now left of me.'

Linnell was touched by his appealing look—the look for a moment of the real Haviland Dumaresq, who felt in his great heart the full pathos of his own unrequited sacrifice for the good of his kind, as he firmly believed it.

'Indeed,' the young man made answer earnestly, 'I wasn't vexed, Mr Dumaresq. I only wanted you to accept a small tribute, in part payment, as a single instalment, from one who owes to you intellectually and morally more than he can ever find words to tell you.—And as to the picture, it really didn't take me long. I value my own work very lightly, indeed. I should have thought myself more than repaid for my pains in painting it if a man whom I respect and revere so much would have condescended to accept it from me and keep it as a memento.'

'You remember what I told you the other evening,' the old man replied, with a more

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searching glance at his companion's features. 'Do as I say, my friend, and not as I do, if you wish to flourish. Don't despise money foolishly—as I have done. My advice to a young man setting out in life is simply this—Follow the world: the world is wisest. You can't afford to fling away sovereigns like water. You're a painter, and you must live by the practice of your art.—Now, why did you sell me that picture so cheap? Mansel came in after you'd left this morning, and told me you could have got fifty guineas for it any day in London.' He clasped his hand gently round the painter's arm. 'Don't be utopian, my dear fellow,' he went on with unwonted colloquialism. 'Tell me why you let me have it for twenty.'

Linnell blushed and hesitated a moment. At last he determined to blurt out the truth and shame the devil. 'Because I knew you couldn't afford more, Mr Dumaresq,' he said shyly.

Haviland Dumaresq did not resent the unexpected remark. 'You were right,' he answered with a sigh. 'I am poor, poor. The money I gave you was all I had in the house just then. You have been quite frank with me, and I am quite frank with you in return. I have still to earn to-morrow's dinner.'

A strange doubt flitted for a moment across Linnell's mind. His eight hundred guineas then? What on earth could have become of them? Was it possible that Haviland Dumaresq, the deepest and broadest of living thinkers, could stoop to tell him so despicable a lie? But no! impossible! He rejected the idea with scorn, as any man with one spark of nobility in his nature must needs have rejected it. No doubt Macmurdo and White hadn't yet sent in their annual account. The secret of Dumaresq's new-made opulence was not yet out; he was still unaware of the magnificent sum of which he was already potentially master.

(To be continued.)

### HARD WINTERS.

THERE is a prevailing idea that winters in this country have become milder than they once were; and against mild winters there is a strong popular prejudice. In both respects the current opinion is now admitted to be incorrect. The winters of 1878 and 1879 were equal in severity to almost any season recorded in more remote times; and other hard winters occurred a few years earlier, regarding which a brief statement may be interesting.

On the 30th of December 1866 began a snow-storm which indicated how powerless in conflict with the elements are even the most skilful arrangements of modern civilisation. In London, the mercantile centre of the world, business was practically suspended for several days. Snow lay on the streets so thickly that wheeled conveyances were stopped, foot-passengers could move only with difficulty; and business men residing in the suburbs could not reach the City though every modern facility for travel was at their disposal. Shop windows in London were crusted with ice for days, so that decorations inside could not be seen even had people been abroad to look at them. As customers had in great measure ceased to frequent the shops, some

leading merchants half closed their doors and commenced stock-taking. Labour outside was generally suspended; and in London alone sixty thousand operatives were reduced to subsist on charity.

In the provinces, matters were equally bad. Along the coast of Kent snow fell about the 10th of January to a depth in some places of several feet. Traffic by railway from London to Dover was much interrupted; and metropolitan newspapers were issued without any continental correspondence because the mails from Paris had not arrived. In all the eastern counties of England, traffic was much hindered; roads were blocked with snow; mail-gigs were buried in the drift; and grain could be brought to market only with great difficulty, because rivers, canals, and railways were choked with snow and ice. Even in the Isle of Man a parson woke up on the morning of Sunday the 13th of January to find a snow-wreath of seven to twelve feet in depth between the parsonage and the church, the porch of which was likewise filled with snow to the ceiling. To make matters worse, it was found there was no bread in the house, the baker having failed to make his rounds on the previous day owing to the storm. In Scotland, matters were worse. On the Ork of Caithness, in the far north, snow had accumulated to a depth of twenty feet.

About Christmas 1860 occurred one of the most remarkable frosts that has been experienced in this century, or, indeed, at any former period in the history of this country. The summer had been cold, sunless, and rainy; the harvest was late, and was saved from failure only by some bright weeks in September and the beginning of October. About the 26th of the latter month the fine period ended, and the winter was conspicuous for rain, sleet, frost, and snow in continuous succession. On the three days beginning with the 24th of December the temperature was considered to be lower than it had ever been formerly known in Britain. At nine o'clock on the morning of Christmas Day the thermometer in Hyde Park indicated seventeen degrees of frost; but this was moderate compared with experiences in other localities. Near Nottingham the thermometer never rose above twenty degrees on the 24th of December; and from seven o'clock on Christmas morning till eleven next day the temperature never rose so high as zero of Fahrenheit's thermometer, thus indicating thirty-two degrees of frost all the time. The lowest point reached in that locality was eight degrees below zero; and this extremely low temperature was indicated also in Edinburgh.

One result of this unusual cold was an increase of mortality in January sufficient, along with the whole tendency of recent statistics, to dissipate the old idea that a mild winter is particularly unhealthy. In London, the rate of mortality for the week ending with the 19th January 1861 had risen to 1923, or 585 more than the estimated average for the same week, and about double the number of deaths for a week in autumn. This increased mortality was attributed to the effects of cold, especially on the respiratory organs; and pulmonary complaints, exclusive of phthisis, carried off in one week 702 persons, whereas the corrected average was only 301 for the corresponding week in ordinary years. Deaths



from bronchitis were nearly three times the estimated number for the corresponding period of the year. Apoplexy increased greatly during the cold weeks; paralysis increased in a still greater proportion; and heart diseases, according to the official record published at the time, were fatal in 119 cases, while the usual average was only 53 for the same period. In the City the mortality rose within seven of the number recorded in 1848, during a visitation of the cholera. Among hill sheep there was great destruction in the spring following that remarkable winter. The total loss to flockmasters in Ettrick Forest alone was estimated at £40,000 sterling. About one-fifth of the old sheep in that locality perished, and three-fourths of the lambs, besides a deterioration in the constitution of those left alive. Among hill shepherds it is still remembered as 'the bad year.'

It is no new idea that the death-rate rises with a falling thermometer. The month of January 1795 was a very cold month; but the corresponding period in 1796 was uncommonly mild. In the latter month the maximum reading of the thermometer near London was 55, the minimum 38, and the mean a little over 47 degrees; so that during the whole month it was never less than six degrees above the freezing-point. It is narrated that on the 9th of January that year there was, in an orchard in the parish of Ashford, near Barnstaple, an apple tree with blossoms in full perfection; and another tree with apples set. On the other hand the winter of 1795 was very severe. A snowstorm began early in January, which lasted, with some interruptions, till the close of March—a period of thirteen weeks. In Scotland it was popularly known as 'the long storm.' Snow lay on the ground to a depth of twelve inches or more, with a clear calm atmosphere, and the frost sometimes intense. More than one person died from the effects of cold; one of them, a butcher, belonging to Kelso, who was found dead on a country road with his horse and dog standing beside the lifeless body. The contrast between January 1795 and the corresponding month in the subsequent year was subject of general remark; and a paper was presented to the Royal Society by Dr Heberden the younger, containing a comparison of the mortality in the two months. From this it appeared that the excess of deaths in January 1795 over the corresponding month in the year following was 1752 in London alone; a number, said Dr Heberden, surely sufficient to awaken the attention of the most prejudiced admirer of a frosty winter. The month of January 1796 was so mild that most people complained of unseasonable weather, and apprehended serious effects on the public health; 'apprehensions which,' said a commentator on Dr Heberden's statistics, 'this interesting fact seems to resolve into mere vulgar prejudice.'

On the general question, whether or not our winters have become milder within a limited period, there is something to be said. The allegation is not new, and was made in the latter years of the eighteenth century with as much persistency as it is now. It may be admitted that improved cultivation has tended somewhat to modify the temperature in Britain. This is quite perceptible to any one who passes from a fertile

strath of drained and cultivated land into a district of moist and spongy moor. In the former case the atmosphere is often clear, balmy, and bracing; whereas in the latter it is cold, damp, and foggy. Over moist, undrained land, clouds form more readily and showers are more frequent. As matter of observation it is known that the temperature of the soil over wide tracts of country has by thorough draining been raised three or four degrees; and the temperature of the air over such land has become higher in a corresponding degree. These phenomena, however, have only a partial and local influence, and do not affect the great wind-currents which regulate the seasons. Drainage of land will not avert east winds; and east winds are certain to bring and deposit their burden of snow, sometimes even in the month of May. The drainage of bogs may have carried off surplus vapours that engendered agues and rheumatisms; it has likewise improved the temperature of the soil, adding to the vigorous growth of crops; but has not greatly diminished the average fall of rain or snow, nor changed the tendency of atmospheric conditions incidental to every season of the year. One reason for the prevailing idea that a change has occurred may be found in the fact that a hard winter or a hot summer has always left on the rural mind a deep impression, just as it does at present, while many ordinary seasons have slipped quietly away and fallen into oblivion.

In point of fact, hard winters come only at irregular intervals; and it is well that this is so, both for the sake of the flocks and of the public health. Looking back two centuries, we find matters much the same as they are now. Among the high and stormy hills of Ettrick Forest the winter of 1674 has always been memorable for 'the thirteen drifts.' Traditions regarding that stormy time lingered for ages in the wilds of Selkirkshire, and were embodied in a connected narrative by James Hogg, the Ettrick Shepherd. The great drift occurred in the month of March; but previous to its commencement, the ground was covered with frozen snow; and the storm which then came on from the north-east lasted thirteen days without intermission. During all that time the cold was intense. When the storm ceased there was on many a high-lying farm not a living sheep to be seen; and about nine-tenths of all the sheep in the south of Scotland were destroyed. On Eskdalemuir, in Dumfriesshire, which was understood to maintain 20,000 sheep, only forty young sheep were left on one farm, and five old sheep on another. The farm of Pawhope, near the source of the Ettrick, was said to have remained twenty years without a tenant, after which it was let at the annual rent of a gray coat and a pair of hose. On Bowerhope, a farm belonging to Sir Patrick Scott of Thirlstane, all that remained of 900 sheep was one black ewe, which was chased into St Mary's Loch by some idle dogs and drowned. From other sources information comes to hand showing how serious was the loss of stock in that disastrous year. James, Duke of Monmouth, as husband of Anne, Duchess of Buccleuch, was an extensive proprietor in the district, and in 1675 obtained a license to import from Ireland 4800 'nolt' of a year old and 200 horses, to make up for losses

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sustained on the Buccleuch estates in that memorable drift. The sheriff of Roxburghshire, W. Scott of Minto, was cautioner that the number should not be exceeded, and the letter of the bond was observed; but as some of the oxen were more than a year old, the sheriff was fined £300 sterling—a good round sum in those days.

In the present century, the years 1838 and 1814 are historically the most notable instances of a hard winter, and in both cases the severe weather occurred in January. The frost of 1838 was preceded by three months of conspicuously high temperature, on which a paper was read by Dr Lindley at a general meeting of the Horticultural Society in London. In December 1837 the mean temperature in London was fifty-one degrees; the lowest point reached was five degrees above freezing; and the thermometer indicated fifty-four degrees on Christmas Day. With the beginning of 1838 came a remarkable change; and from the 7th till the 20th of January frost continued without any change or intermission, but with a gradual increase of intensity. On the morning of the 20th, at half-past six o'clock, the thermometer at the Receiving House of the Royal Humane Society in Hyde Park indicated three degrees below zero, or thirty-five degrees of frost. About noon on the 21st the wind veered to the southward, signs of thaw became apparent, and on the 22d the thermometer rose to forty-seven degrees, but fell again at night, and frost returned with scarcely diminished intensity.

As might be expected, with such low temperature continued over days and even weeks, the Thames was completely blocked with ice. On the 21st of January navigation was suspended; and men were able to cross the river on the ice below London Bridge. On the 25th a sheep was roasted entire about the centre of the river near Hammersmith; and at the same date, skittle-grounds were formed on the ice, where large numbers of people were occupied for many hours every day. Till the 7th of February the frost continued, after which a thaw came on, and the ice was gradually dispersed.

Still more memorable was the frost in 1814, which has always been considered the worst season in the present century. Early in January snow fell, and this was followed by intense frost. About the middle of the month accounts reached London from many parts of England with details regarding a most unusual fall of snow. At Exeter there had been nothing comparable to it for at least forty years. Hardly any one moved out of doors except under pressure of necessity; and the stagnation of business was greater than could be recollected at any previous period. About the same date, masses of ice had collected on the Thames about London Bridge, making it nearly impossible to carry on the usual traffic. At Edinburgh and Glasgow roads were blocked with snow; and the thermometer indicated about twenty-five degrees of frost every night. So much ice had accumulated on the Mersey at Liverpool that traffic was suspended, and no poultry or fresh vegetables could be had in the market. About the 21st of the month a fresh fall of snow in London occurred, and was accompanied by a bitterly cold wind. In parts of the metropolis where houses were old, it became necessary to

relieve the roofs by diminishing the load of snow; but this, added to the quantity already on the streets, made pedestrian exercise still more difficult. Water-pipes were generally frozen; but a supply was maintained by opening plugs in the streets, and the streams of water becoming frozen, increased the difficulties of pedestrian or other traffic. Navigation having been practically suspended, and travelling by road having likewise ceased, the price of coal increased to a most alarming extent, and other necessities of life became equally scarce.

The Frost Fair on the Thames in 1814 has been often described; but there was a similar carnival on the Tyne at Newcastle. On the 15th of January the Tyne was frozen across, and skating on the river had begun. Snow fell heavily on the 15th and 16th; but on Monday the 17th the snow was cleared off by keelmen, whose occupation of navigating the river had been temporarily suspended. On the 18th snow fell so heavily that skating was impossible; but some rain followed and reduced the quantity of snow. What remained got frozen by a return of low temperature, and this added greatly to the thickness of the ice. Crowds of people continued to amuse themselves on the river daily, and the sports lasted far into the night. Booths were set up, fires lighted, races organised, and games of football enjoyed by many hundreds of people. The average thickness of the ice was about ten inches. About the same date a company of fifty gentlemen dined on the ice near the centre of the Tweed at Berwick, an occurrence that had not been witnessed previously since the great frost in 1740.

We have referred to the severe winters of 1878 and 1879, and may add that that of 1881 was also severe. On January 4, in Scotland, there was ten degrees of frost; on the 7th, fourteen; on the 9th, twenty-one; on the 15th, the thermometer fell to zero; and on the 17th, to twenty-two degrees below zero. In the present winter there has also been severe frost, the Thames having been again frozen over.

## THE RING AND THE BIRD.

### CHAPTER IV.—CONCLUSION.

I HURRIED home with the desecrated ring in my pocket. The first thing that met my ear was the screaming of the parrot, which seemed more violent than I had ever known, and from other sounds I guessed that he was throwing the weight of his body against the wires of the cage.

'Can't you stop that creature?' I asked the servant who opened the door to me.

'No, sir. I've covered it up and done all I could; but ever since the ladies went up-stairs it has been screeching like mad.'

'The ladies are up-stairs?'

'Yes, sir, in the drawing-room, and the Colonel with them.'

A wild scream came from the parrot.

'Let Polly out, Jane,' I said; 'that is the only way to keep it quiet, and my head is aching.'

They were all in the drawing-room; they had moved there in something like military order,

and all the time of my absence the other three had watched poor Agatha as cats might an unfledged sparrow. Louisa and the Colonel had gazed unflinchingly—I heard all this afterwards; but Mrs Gretton had shed tears as every moment their prisoner grew more exhausted and more deathly pale. They had given her a cup of tea, which now stood untasted by her work-basket on the small table by her side. There their charity had ended; none had spoken a word to her. She looked half-dead as I entered, but she turned her sad eyes despairingly to me. I answered her look by clasping her in my arms.

'It's all right, my darling; I know all about it now,' I cried.

'And Will?' she asked; 'what about him?'

'I have made it all right for him in the meantime. We'll talk about that afterwards.'

Then turning to the others, I said: 'It's all right; you made a mistake. It was her own ring—my ring—that Agatha gave her brother.'

I took the diamond from my pocket, and put it again on her hand, the hand she had kept concealed—I could guess why, *now*—under the folds of her shawl.

'Oh Agatha, I'm so glad,' cried Mrs Gretton; but Louisa said: 'It may be all right about Agatha, but it doesn't explain what has become of Colonel Farrer's ring.'

The Colonel took up the strain. 'Oh yes, it does,' he said contemptuously. 'That precious pair of lovers are in collusion, that's all. They know where my ring is well enough; and I shouldn't wonder if that brother of Miss March's has it in his possession. He seems to be a scapegrace at the best; and it wouldn't injure his character so much as it would that of the estimable and affectionate couple here if stolen property were found in his possession. That, I take it, is the whole mystery.'

This was too much for me. I had, I think, kept my temper fairly well up to this moment; but the Colonel's wholesale accusation, and the strain in which he worded it, stung me past patience.

'I have known one thief in my life, Colonel Farrer, one receiver of stolen property,' I cried, 'and that one is—you! I have not got your ring; I should be ashamed to possess a thing that had such a history. My hands are clean; I possess nothing that I have not honestly won. But you became the owner of the ring you have now lost by means of robbery and murder. It is a ruby in your eyes: it is a great blood-stain in mine, and I hope you will never know a moment's peace in possessing it. If you had any sense of honour, your chief desire would be not to get that ring back for yourself, but to restore it to its rightful owner.'

'Its rightful owner! And supposing I don't own that ring, may I ask you to tell me, in that fine eloquent way of yours, who it belongs to?'

'To Ram Asoka.'

'And where am I to find him?'

The Colonel had me there. 'I—I can't say, but that parrot seems to know, and'—

The Colonel actually smiled, so pleased was he with his advantage. 'The idea of referring to a parrot for information as to the abode of a departed spirit seems—well'—

'I don't care,' I burst in impatiently. 'The parrot knows something: he knows everything; and I believe that the soul of Ram Asoka, the man you killed, is imprisoned in that bird's body.'

'Mr Laurence, I am a Christian,' said the Colonel with all imaginable dignity. 'I don't believe in the transmigration of souls or any such heathenish doctrine. And if I did, I couldn't make restitution to a parrot. It couldn't wear a ruby ring.'

'I don't know; I'd give it a chance. It evidently wants the ring.'

"And he won't be happy till he gets it," sang a shrill voice behind me. I turned, and there was the parrot—I had almost said Ram Asoka—hopping in at the door. He looked at me in a confidential manner, and with the courteous comment of 'Right you are, says Moses,' sprang upon the back of a chair and surveyed the company.

We all laughed, even poor pale Agatha, even the indignant Colonel. With the parrot's opinions most of us sympathised; but there was no denying that his manner of expressing them partook of the language common to Ratcliff Highway or Seven Dials, or wherever was situated that dreary retreat from which Mrs Gretton had rescued him. Like a good many Indians who pick up our language from conversation, he used our colloquialisms with more aptness than dignity.

But when our brief outburst of amusement was past, we were still left face to face with the question, Where was the ring? Indeed, Polly's entrance had, after all, but brought it back from those cloudy regions where my bewilderment, my superstition, perhaps, had taken it.

'This is very amusing,' said the Colonel, 'and no doubt Mr Laurence appreciates the valuable support his opinions have received. But even he must admit that before I give the ring to his learned parrot I must get it back myself; and that,' he added truculently, 'will, I think, be best managed by giving Miss March into custody.'

We all exclaimed; but the parrot's cry of grief rang high above all. I began some threat, inarticulate, blustering; but Agatha, turning to the parrot, said in a piteous tone: 'O Polly, can't you save me?'

No stronger proof could well be given of our growing faith in the mystic connection between the ring and the bird than this appeal of Agatha's. It sounds absurd when set down here, but at that moment it seemed most reasonable and just.

And Polly came to the rescue. He fluttered on to the little table which held Agatha's work-basket. There he pushed with all his might against the slim wicker-case till he thrust it and, as it chanced, the half-cold cup of tea as well, on to the drawing-room floor. And there, among the cotton bobbins and balls of worsted it lay, flashing its crimson gleams, that outshone the red light of the sunset, the ruby of Ram Asoka. Somehow at that moment I began to understand how the greed of possessing such a gem as that might tempt a man to sin. I made some allowance for the Colonel.

We all rushed to the ring; but the parrot was ahead of us. He picked the ring up in his beak, and flying to Agatha's arm, dropped it into her hand. Then he retired to his chair-back as one who has done his work.

Agatha went up to the Colonel. 'I am very pleased,' she said with a cold smile, 'to be the person who hands to you the ring which had so miraculously disappeared.'

He took the ring from her; but it was to the parrot that he directed his reply. 'I,' he said, 'am much obliged to you for discovering the ring, which, by some means or another, had got hidden in Miss March's work-basket.'

The sarcasm of his tone roused me once more; but as my voice was raised in protest, Agatha interfered. 'Oh Frank, let him alone,' she cried. 'For my sake, don't quarrel with him. I can't stand more to-night.'

So, most unwillingly, I held my peace, and before long we separated, weary with the strain of the day.

A few words more will end this brief eventful history. Next morning, the Colonel heard a tapping at his door. He thought it was Jane, who had brought his hot water. After a minute he opened the door; but there, on the mat, there stood, not the harmless water-can, but—more dreadful to him than Edgar Poe's raven to the gloomy bard—our magically gifted parrot. (We found out afterwards that he had managed to unfasten the door of his cage and so make his way out.) With an exclamation that had better be left unrecorded, the Colonel started back, and Polly hopped into the room. He made straight for the dressing-table on which lay the ruby ring, still too small for the Colonel's injured hand. He seized it, while the human claimant stood helpless and amazed at this latest development. Holding it in his claw, he bent his eyes on the Colonel, and again said, as he had so often done, 'Who killed Ram Asoka?' Then, the ring still tightly grasped, he flew out of the open window, and was lost to view among the surrounding chimney-pots. And that was the last any of us saw or heard of Ram Asoka.

Was the spirit of the murdered priest indeed confined beneath the bird's green feathers, and did he come thus to claim the gem of which he had been robbed? Or was the whole thing a chapter of accidents, and our parrot no more than a mischievous thievish bird, to whom chance gave an appearance of reason in his deeds? I cannot venture to say. I think—what I think!—and Agatha agrees with me. But for yourself, reader, answer the question as you will, and as you are the more akin in mind to Horatio or to Hamlet.

### THE NEW ELECTRIC UNDERGROUND RAILWAY.

It is now only sixty years since Salvatore de Nigro, the Paduan Professor, discovered that by means of the electric current he could generate continuous motion; and yet at the present time there are some two hundred and fifty different lines of railroad where electricity is used as the motive power. This is an age of progress indeed, and unique in both the rapidity and daring of its strides, for in no other surely could half a century have changed a scientific toy into a potent commercial factor. As a matter of fact, however, it is the last decade that has seen the introduction

and spread of electric railroads, which seem to have been successfully started for the first time at the Industrial Exhibition held at Berlin in 1879. Since then, more than two thousand miles of electric railroads have been laid, and active preparations are being made in many places for the extension of the system. At the present moment a new line is proposed from Vienna to Buda-Pesth, a distance of one hundred and fifty miles, on which it is hoped a speed of sixty miles an hour will be obtained; but nearer home we have at Portrush, in Ireland, a short line; and on the 18th of December there was opened to the public the New Electric Underground Railway, known as the City and South London Railway. Although this is not the first railway on which 'captive lightning' is made man's dashing steed, it presents so many noticeable differences from the railroad so well known to us all, that a short account of it will doubtless prove interesting.

When first proposed some years ago, the engineers obtained powers from Parliament without specification as to the motive power to be used; the only proviso being, that at any rate steam would not be employed. The line is only three and a quarter miles long, but noticeably differs from the other London underground lines. In the first place, instead of trying to take a bee-line from station to station, the directors have wisely avoided the expense of compensating land-owners by following the line of the streets above; and in order to do this in narrow thoroughfares, the 'up' and 'down' lines are laid in separate tunnels, one being directly beneath the other. Thus it comes about that the stations are at depths varying from twenty to sixty feet below the surface, although the employment of hydraulic lifts prevents this being an inconvenience to the passengers. The tunnels are made of short segments of iron tubing, some ten feet in diameter, and these are firmly bolted together and cemented into the soil, so that there is no possibility of subsidence above. When the line was cut, workmen removed the soil from a space a little less than the proposed tunnel, and then a sort of gigantic paste-cutter, the exact size of the tunnel, was driven forward by hydraulic pressure, forming the head, as it were, of an enormous worm, into whose neck fresh segments of tube were from time to time introduced. All this was not, of course, accomplished without difficulties of many kinds; and more than once the much-dreaded water tried to force its way in. But now all is done; and the passenger, seated in a car brightly lit by incandescent lights, passes safely along under the Thames itself, as secure from collision and mishap as is possible in this world. Collision there cannot, humanly speaking, be a chance of; for the 'up' and 'down' trains run in separate tubes; and the employment of the 'block' system and Westinghouse brakes prevents two trains on the same line from colliding.

The trains consist only of an engine and three carriages, so built as to practically fill up the whole space of the tubes, thus forming an excellent set of air-pumps for the ventilation of the line. The motor gathers its power from an insulated rail placed on the sleepers between the

other two; and no trace of the wonder-working 'fluid' escapes, unless it be an occasional flash as the train passes the points necessary at Stockwell and London Bridge. The carriages are about twice the length of a tram-car, and the seats are along the sides. They are further all connected together, as in the Pullman system; and two attendants travel on each train to close the gratings through which passengers enter at the ends of the carriages. Two points especially attract attention—one being that the carriage floor is on a level with the platforms, and hence there is no need to practise gymnastics before a journey, as one must perforce do in some places. The second point is, that in each carriage is displayed conspicuously the name of the next station at which the train will stop, a feature that enables a traveller to know where he is, even if ignorant of 'English as she is spoke by porters.'

On leaving the train, there is no need to search through all one's pockets for the self-hiding tickets provided by ordinary companies, for when you enter the station you start from, twopence laid down at the turnstile has franked you for any, or the whole, of the distance. Here, again, the Directors have made a step in advance, though it is hardly to be hoped that other railways can possibly follow; just yet, at all events.

Altogether, then, a journey on the new line presents many novel features, and seems to give promise of greater things in the near future; but to many, the journey on the lifts is almost as interesting as the journey along the line itself. In this case, however, electricity is not employed, but hydraulic power; and each lift will accommodate half a train-load of passengers. Here, again, every possibility of mischance is provided for, since not only does each lift work independently of its fellow, but if any of the supporting ropes should yield, ten or twelve safety-clips would come into immediate action, any one of itself being able to sustain the whole load. To the engineer, the interesting point is that all the lifts are worked from the Stockwell terminus; so that this is the heart, as it were, whence the life and power of the whole system emanate.

But will it pay? will it pay? is the important question asked by many; and to this, of course, no definite answer can well be given. Rather unfortunately, perhaps, part of the line runs between places possessing excellent tramway service; and while on the underground the journey from the Kennington Oval Station to the Elephant and Castle costs twopence, you can 'tram' it for a penny. But, on the other hand, the trams take much longer on their journey, and do not, besides, run across the river; whereas the railway carries you from the Oval to London Bridge in about ten minutes. In addition to this, any one who knows the congested condition of the traffic from the Elephant and Castle to the City cannot doubt that many hundreds of passengers would daily make use of the 'drain-pipe'—as the line has been irreverently called—even if the fare were much higher than it is. Still, more than half a million of sunk capital is no light burden, though doubtless the same energy which has secured such great success up to the present will be used by the able Directors and Engineers to ensure financial success to the first of our English electric

railroads. The pioneer has always to bear the brunt of the fight; but energy, patience, and perseverance ever succeed in the end. 'Labor omnia vincit.'

## THE MONTH:

### SCIENCE AND ARTS.

A CLEVER little instrument founded upon Professor Hughes's Microphone has recently been tried with successful results. It is the invention of Captain de Place, is called the Seisophone, and its mission is to detect flaws such as air-holes and imperfect weldings in metals. That such an instrument will be of extreme value, especially for testing metals employed in the rolling stock of railways, is obvious, for many lives must often depend upon the perfect condition of the materials used in such work. The apparatus consists of two parts, one being a tiny hammer, which taps the metal as it traverses its surface, and which works by pressure upon a pneumatic ball held in the operator's hand, while the other, a telephone, is carried into another room, so that the taps of the hammer can only be heard through the instrument—an effect which is brought about by including in the battery circuit a microphone. The listener at the telephone can tell by certain variations in the character of the sound when the hammer is near a flaw. He then touches an electric button, which rings a bell in the room where the hammering operation is carried out, so that the faulty place may be at once marked for subsequent careful examination.

In an interesting article upon Life in the African Forest, Lieutenant Stairs, who passed eight months in Fort Bodo during the Emin Relief Expedition, gives his opinion that medical authorities are at fault when they caution Europeans suffering from fever in tropical countries to abstain from eating much meat. His advice is that to prevent such fevers, and their consequent feebleness, the strength should be kept up with flesh-food. 'With vegetable food,' he says, 'no white man doing hard work day after day can keep up his system unless he be perhaps a vegetarian from childhood.' He also says that it was a matter of common remark at Fort Bodo that fifteen days of bad food meant fever, and that white men used to beef all their lives cannot give up that nourishing article of diet without suffering for it.

So much attention is now concentrated upon the important subject of speed of ships, that the introduction of a new form of boiler for marine engines is a matter of general interest. The boiler to which we refer is the new Water-tube Boiler, which has been designed and successfully tested by Mr Yarrow, one of the well-known firm of torpedo-boat builders; and although the new form of boiler is primarily intended for that class of vessel, it will no doubt be employed for far larger craft when its many advantages become better known. We have not the space for a full description of the new device, but we may say that it differs from the locomotive form of boiler commonly used in one important particular. Its tubes, instead of giving passage to the heated air from the grate, and so heating the water which circulates round them, contain themselves the



water, which is heated and caused to circulate throughout the system by means of the flames which play freely around them. Many forms of water-tube boilers have previously been designed, but they have all been open to objections which have prevented their adoption. In the Yarrow boiler these difficulties seem to have been cleverly surmounted.

The most recent official Report upon the subject of Mortality from Snakes and Wild Beasts in India contains the grave information that in spite of the large and increasing sums spent in rewards for the animals killed, fatalities increase at an alarming rate. There is reason in fact to believe that the offer of these rewards has in some cases stimulated the breeding of snakes. Taken as a whole, therefore, this Report would seem to indicate that the reward system has failed to accomplish its purpose. It is now suggested that the cover round about the villages which affords lodging for snakes should be destroyed, and district officers are to be instructed to see that this is done. In the year 1888, twenty-three thousand persons, as well as seventy-six thousand cattle, met their death through snakes and wild beasts of various kinds in India.

The Council of the Royal Meteorological Society have announced their intention of holding an Exhibition in London of rain-gauges, evaporation-gauges, and kindred instruments. The Exhibition will be open for a few days only during the third week in March, but is sure to attract many visitors, for all are interested in the supreme question of weather, and are anxious to ascertain how its vagaries can be registered and, to a certain extent, forecast. The Committee will be glad to receive for exhibition instruments or apparatus which have been devised or first constructed during the past twelve months. They will also be thankful for photographs or drawings which bear upon meteorological science, including photographs of lightning-flashes and cloud-formation. In connection with this matter of weather registration it may be interesting to note that during the severe frost in January this year the lowest reading recorded at Greenwich had only been equalled on three occasions during the past fifty years.

Those who happen to have exhausted all the pleasures of life, and are in search of something entirely new, cannot fail to regard with interest the scheme which has recently been elaborated for dropping a roomful of living persons from the top to the bottom of the Eiffel Tower without hurting them. Like the switchback railway, the enterprise is designed simply and purely as a new means of excitement, with something more than a spice of danger in it, and in one or two of the French papers illustrations are given of the manner in which the singular idea is proposed to be carried out. The room in which the visitors are placed is shaped like a conical bullet, and is allowed to slide into space point downwards. To break its fall, and to prevent any unpleasant concussion to its inmates, the projectile is to fall into a deep basin of water. We believe and hope that this ridiculous scheme will not, for the credit of human nature, get much farther than the initial stage.

Some interesting particulars have been lately published with regard to the telegraphic cables

which now form such a network over the world. The submarine cables are owned by twenty-six companies, with a combined capital of forty million pounds sterling, and a revenue of more than three millions. The first cable was laid in 1851, between Dover and Calais, and it is still in use. From this small beginning the number of cables has gradually increased, until at present their total length reaches the wonderful figure of one hundred and twenty thousand nautical miles. One of the most noteworthy feats ever performed by telegraphy was the sending of the result of last year's Derby from Epsom to New York in fifteen seconds; which means that the name of the successful horse was known in New York almost before the animal had time to pull up after passing the winning-post. This result was brought about by stopping all business on the lines directly the race commenced, and having operators on the alert to telegraph immediately the two or three letters which, by previous agreement, were to distinguish any particular horse. That every one must have been on the alert for the news and ready to act upon his instructions without delay is evident when we state that the message had first to be sent from Epsom to London, thence to Ireland, from Ireland to Nova Scotia, and thence to New York.

A paper upon the use of Opaque Glass in Decoration, recently read by Mr J. C. Powell before the Architectural Association, was full of interesting matter, and dealt with a phase of art about which little is known by the general public. It traced the history of decoration of this kind both of walls and pavements, from the earliest times, and gave an elaborate account of the most beautiful and important applications of opaque glass in mosaic, as it is termed. This art, the reader tells us, is of the greatest antiquity, and has been practised by many different nations with various materials. Long before the Christian era, this kind of architectural ornament was largely employed, fragments of marble being used, but chiefly for pavements. About the fourth century, opaque glass came to be largely used in this kind of decoration, the glass being rendered opaque by the addition of oxide of tin, and coloured by means of various other metallic oxides. The work was probably carried out as it is to-day at Murano, where a number of crucibles are arranged like wash-hand basins in a lavatory, with a wood-fire beneath. These crucibles contain the molten glass, which when sufficiently soft is ladled out on to a metal table and pressed into circular cakes averaging about eight inches in diameter and about three-eighths of an inch thick. These are annealed, gradually cooled, and are then broken up into fragments of a convenient size for the use of the artist.

Most of us hardly realise the extreme depth of some of our coal-mines, in which men daily work to win for us one of the first necessities of our lives. One of the deepest mines in this country is in Lancashire, and is known as the Ashton Moss Colliery. When we say that it is one thousand and forty yards deep from the surface, the mind fails to comprehend any idea of the matter; so that we must look for a comparison with some well-known thing or place before we can grasp what this great depth means. St Paul's Cathedral is a good object for the purpose,

for most people know it by sight, and also know that it is four hundred feet in height from crown to base. Now the coal-mine referred to is just upon eight times the depth represented by a plummet dropped from the top of the Cathedral. Strange to say, the miners do not experience any serious inconvenience from working at so great a depth, except that they are somewhat less energetic than they would be if they worked at the surface, a circumstance which is probably accounted for by the high temperature of eighty-seven degrees which is found at that depth. The air is dry, there is very little water in the mine, and the gas given off is not greater than in workings nearer the surface.

About ten years ago, when Edison's phonograph first appeared before an astonished world, many curious ideas were ventilated as to the power of the instrument to preserve the utterances of the dead for future generations. This notion has been to a certain extent realised, for not long ago a party of literary gentlemen met in London on the anniversary of the poet Browning's death, and were able to listen by means of the instrument to a reproduction of words spoken by the deceased. A curious point in connection with the matter is that when making the original record on the phonograph cylinder the poet in quoting some of his own lines had to be prompted by a bystander, for his memory failed him. This prompting, together with the apology from the poet which followed, were duly reproduced by the instrument.

The recognition of the Germ theory of disease, which has of late years caused such wonderful progress to be made in battling with many of those terrible ills to which human flesh is heir, is also responsible for the promotion of many absurd ideas as to fancied dangers lurking amid the most innocent pursuits and pastimes. The latest of the alarmist rumours is represented by the suggestion that drawing-room carpets, being probably the haunt of dangerous microbes, should not be danced upon by giddy feet, in case those germs which are always ready for mischief should arise in clouds and attack the human occupants of the room. Now, if householders were in the habit of cultivating uncleanness in their carpets and hangings, or lending them out on hire to fever hospitals, there might be some sense in the suggestion. So there would be if it had been proved that the sweeping or beating of carpets and the dusting of furniture were peculiarly fatal occupations. As things are, the statement is a foolish one, and mischievous as well, for it may receive some credence by those who are of a nervous disposition.

Many deaths from burning are still attributable to the improper use of paraffin lamps, although several appliances have been invented which will cause one of these lamps to be extinguished should it be upset or thrown down. Some time ago a Committee of scientific gentlemen inquired into the question of paraffin-lamp employment generally, and laid down certain rules which ought to be observed in their use. One of these related to the common mode of extinguishing the wick by blowing down the chimney of the lamp. This custom was strongly condemned as being fruitful of danger, and users of lamps were directed to blow across the open mouth of the chimney, after

the wick had been turned down by the regulating button. Curiously enough, this Committee failed to point out that if one of these lamps is turned down to its lowest point, the flame will in a very short time die out of itself without any help from the breath. This seems to be a simple matter to call attention to, but in view of the very many fatal accidents which are recorded as resulting from ignorant use of lamps, it is of great importance.

Successful trials of some novel hydraulic appliances have recently been carried out at Portsmouth on board H.M.S. *Vulcan*, the new torpedo depot ship. These appliances consist of two enormous 'gooseneck' cranes, one on either side of the vessel, whose duty it is to act as davits, for the purpose of lifting the twenty-ton torpedo boats, of which the ship carries six, and dropping them into or lifting them out of the water. The cranes have each a total height of sixty-five feet, the major portion of which is hidden below deck, where huge hydraulic rams furnish them with their motive power. By their use a torpedo boat can be slung out of the water and deposited on any part of the deck of the ship, for the cranes have a reach, or 'rake,' of thirty-eight feet, at a speed of ninety feet per minute. The cranes are supplied from Sir W. G. Armstrong's works at Elswick, and various novel fittings belonging to them have been recently patented.

A wonderful feat in gunnery is reported from Singapore. During some target practice there with one of the new breech-loading nine-inch guns, a flagstaff was hit and broken at a range of three and three-quarter miles. This is hardly credible; and a correspondent of the *Times*, who signs himself 'Munchausen,' evidently thinks so, for he pertinently asks, 'What was the diameter of the staff which was visible when three and three-quarter miles off to a human eye directed along the line of sight of a gun; and what was the power of the particular eye which contrived to see it?' He further suggests, what will doubtless be present to the minds of most practical men, that the result must have been brought about by what billiard players call 'a fluke.'

Pyrogravure is a newly-invented process for drawing patterns upon wood or other combustible material by means of a graving-point which is kept at a white heat. This point is of platinum, and it is kept hot by a supply of mingled air and hydrocarbon vapour. Other means have before been adopted for burning ornamental devices upon wood for decorative purposes, and such ornamentation, if artistically carried out, is very effective in appearance.

A writer in the *Hygienic Review* gives some interesting particulars with reference to the diet of the Hindus, and points to the common error made by speakers and writers in dealing in general terms with the inhabitants of India, instead of remembering that the country contains a variety of natives, who are distinct from one another in appearance, habits, and language. It is not true that the inhabitants of India are all vegetarians, for some of the best and the worst are meat-eaters, but all the same India affords examples of the efficiency of a vegetarian diet. Among the Sikhs especially may be found splendid specimens of powerful men who have never tasted meat.

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A rough-and-ready kind of railroad is in use at Cumberland County, Nova Scotia, for the purpose of carrying timber from the woods to the river. The rails are made of spruce poles joined end to end, and spiked down to sleepers of the same material; and the rolling-stock consists of an eight-horse-power engine and a couple of light cars. The tires of all the wheels have a flange on both sides, and are wide enough to accommodate themselves to the varying thicknesses of the wooden rails, which vary from six to four inches in diameter. The little engine is placed between the two cars, so that shunting and alteration of position are obviated. This railway is probably the cheapest ever yet constructed.

## THE CRYPTOPROCTA.

### ANOTHER NEW ARRIVAL AT THE 'ZOO.'

It is frequently the case that an animal arrives at the Zoological Gardens which has never before been exhibited to the public. It is also quite the usual thing for a rarity of this kind, which has perhaps cost a large sum of money, to die at once without allowing itself to be seen. Within the last few weeks the Zoo has received a specimen of a curious creature from Madagascar, which fortunately still survives, and may be inspected at any time in the 'Small Cats' House.' At the moment of writing (January) there is a little difficulty in finding out which is the animal in question; for it has not yet been provided with a card of introduction to the public, that is, with a label.

Madagascar is the home of many extraordinary animals, but of none more interesting than the Cryptoprocta. This animal, according to Professor Cope, is the sole remnant left to us of a large group of Mammals which flourished in great abundance during the 'Tertiary Period.' The name given to this group is Creodonta, which of course means much the same as Carnivora. The Creodonta were quite as ravenous and bloodthirsty as their modern descendants, and equally well furnished with teeth and claws; but they were behindhand in the matter of brain; and being thus perhaps unable to cope with the wiles of their more highly endowed prey, were starved out of existence long before the present epoch, and have only left us a few bones and teeth to tell of their former numbers.

Madagascar is just the place where waifs and strays of this description, which ought to have effaced themselves from creation ages ago, chiefly congregate. That island is supposed to have been originally connected with the African Continent; when it became separated, it was stocked with animals, which were at that time widely distributed. The advent of new forms settled the question of the survival of these creatures on the mainland in the negative; but the representatives of these persecuted and vanquished forms, which had emigrated to Madagascar before the separation, continued to live on in a dignified seclusion, free from the intrusion of any new-comers and only broken by their own internecine quarrels. Fighting the matter out among themselves, the result was the present fauna of Madagascar, which abounds in ancient types, such as those monkey-

like creatures which are not really monkeys, the Lemurs, and the Cryptoprocta.

The scientific name of the animal is *Cryptoprocta ferox*. Judging from the demeanour of the animal at the Zoo, 'ferox' is a rather libellous name. It frisks about in a playful manner, and does not give one the impression of being the most bloodthirsty and savage of all the Carnivora; this, however, is the character that it has somehow got. The ferocity of the Carnivora is almost in inverse proportion to their size: one of the fiercest known is the little weasel, which will kill and destroy merely for the love of the thing, long after its appetite has been glutted. Cryptoprocta may occasionally perform the same office in farmyards in Madagascar that its distant relations, the weasels and stoats, perform in farmyards in England, and have thus earned the title of 'ferox.' But the unprejudiced visitor who can endure for a sufficiently long period the decidedly pronounced odour of the cats' house, will come to the conclusion that for sheer malignity of character, unredeemed by any playfulness whatever, some of the wild-cats easily bear the palm. At the same time it would, perhaps, not be very advisable to attempt any familiarities with the Cryptoprocta in spite of his apparently friendly disposition; an attempt of this sort might lead to the demonstration of a very interesting fact in the structure of this animal—namely, that its claws are quite well developed and are retractile.

Cats, as every one knows, walk upon their toes; they are digitigrade, as the expression is; and as a natural consequence, the claws can be retracted, so that their softened footfall may allow them to approach their victims and make the fatal spring without betraying their whereabouts. Another advantage of this power of sheathing the claws is naturally to keep the sharpness unblunted. On the other hand, the Civets have only half-retractile claws, and many of the Carnivora walk upon the soles of their feet instead of upon their finger-tips. The Cryptoprocta is a mixture of these different conditions; it has retractile claws, but it walks partly upon the soles of the feet: it is semi-plantigrade, to use the technical term.

The Cryptoprocta is of a uniform tawny-brown colour, something like the lion or the puma; there are other cat-like creatures which are thus coloured.

The tawny colour of the lion is compared to the colour of the deserts which it inhabits, and is said to have been brought about in order to render it inconspicuous. The young lion whelps are distinctly spotted, which shows that in all probability the ancestors of the lion were more like a leopard than their descendants. The leopard has changed his spots, but the question is whether the usually received interpretation is the right one. The lion needs no protection from enemies; the muscular power of his limbs and jaws is quite enough protection.

But it might be suggested that a colour-resemblance to the ground upon which he crouches would deceive the herbivorous creatures into fancying that no danger was near until they were actually seized by their fierce and powerful enemy. Probably this is so, if it be true that a hunting lion approaches his prey always with due regard to the direction of the wind. To



admit that probability is, however, a long way from admitting that the colour has been produced for that very purpose; while the coloration of the puma and the *Cryptoprocta* cannot be accounted for in that way at all. One way out of the difficulty is to assume that the two last-mentioned Carnivores once inhabited deserts, but later on, changed their abode, the corresponding colour-change not having yet come into operation. But this is only put forward to show in what straits those who believe in the universal use of colour in relation to surroundings, animate and inanimate, and for other purposes, must occasionally find themselves. All we can say at present is that there appears to be a tendency among Carnivora to lose their spots and stripes and to assume a uniform tawny colour. The young of the *Cryptoprocta* is not known; but the newly-born puma is much more conspicuously spotted than the young lion of the same age.

#### A YEAR'S EMIGRATION.

VERY few of the general public, except those who are directly interested in shipping, can form any idea of the enormous number of people of all nations, creeds, and classes who annually leave our shores with the intention of forming fresh homes across the seas. We have before us as we write a Board of Trade return of the 'numbers, nationalities, and destinations' of the persons who left the United Kingdom for places out of Europe during the twelve months ending December 31, 1890. During this period no fewer than 316,145 souls left our shores. This does not of course in any way represent the total number of persons who emigrate annually, but simply the number who leave the United Kingdom.

Of this 316,000 odd, the majority are English—140,000; the Irish come next with 57,000; and then the Scotch with 30,000. The foreigners numbered 98,000. Of this number the great majority went to the United States; some 86,500 English, 52,000 Irish, 14,000 Scotch, and 81,000 foreigners, being 'dumped' there during the twelve months. The next country in favour was British North America, which received during the same period 18,500 English, 2400 Scotch, 1700 Irish, and 9500 foreigners. Australasia comes next with 16,000 English, 2750 Irish, 2500 Scotch, and only 392 foreigners. When we come to Africa we notice a very great falling-off, only 12,000—English, Irish, Scotch, and foreigners—having sought their fortunes at the Cape of Good Hope, Natal, &c. Some 17,000 emigrated to places not specified in the returns; and so in this way we make our total of 316,000. From these figures it will be seen that the vast majority of these emigrants are British or of British origin.

It is admitted on all hands that emigration is a sure index of prosperity or otherwise of a country. In times of prosperity more people emigrate than in times of poverty. When this statement, strange as it may appear at the first glance, is looked into, it will be found that such should naturally be the case. In times of depression a man has barely enough to keep body and soul together, and though he would willingly leave Old England, he cannot do so for want of money, even though the amount required be only

two or three pounds. In times of prosperity, however, the same man can manage to scrape together a few pounds, and then he 'gets off' with it to what he fondly trusts will be a better and happier land. For example, the year 1889 was a more prosperous one than 1890, except perhaps the latter part of the late year, when trade revived somewhat. In 1889 we find that, to be exact, 342,641 persons emigrated to the various countries mentioned; whilst last year, as we have already stated, 316,145 left 'the old home,' a decrease of no fewer than 26,496, or about eight per cent. This may not appear a very great falling-off; but when we come to reckon the amount in pounds, shillings, and pence, we find out what an enormous difference it must make in the circulation of that needful commodity, as well as to the pockets of our shipowners.

Let us look at the amount received by the various companies for passage-money to the United States and British North America. If we take it at four pounds per head, a low estimate, we find the total to be £1,062,004; of this the Britishers contribute £699,992. It is somewhat difficult to get a fair average cost of the fares to the other countries; but we think we are within the mark if we take it in the following manner: The total number of emigrants to Australasia, Cape of Good Hope, Natal, and all other ports, was 50,644. We average the fare at twelve pounds per head. This amounts to £607,728. It must be remembered, however, that the passage money does not all go to the shipowners; but we can fairly say that after allowing for all extras, &c., at one pound per head, we can credit the shipowners with £1,353,587 as the result of last year's emigration. In 1889 they must have netted something like £1,541,443; so that last year there was a decrease as compared with 1889 of 26,496 persons, representing in hard cash, £197,858. It has been calculated that each emigrant when he lands at a foreign port is worth to the country where he lands at least twenty pounds. If we figure this out, we find that the United States, British North America, Australasia, &c., amongst them received last year something like £6,322,900, and this from the one source alone—Emigration.

#### THE FORGE BY THE FOREST.

It stands half-hidden in the greenwood's edge,  
Its music greets the dawn that glimmers white,  
Before the sunbeams chase away the night,  
Or the first warbler twitters in the sedge;  
All day the anvil rings beneath the sledge,  
The forge-fires roar, and gleam with ruddy light  
Till crimson sunset crowns the distant height,  
And all its fringes fade along the ledge.

Then, though the whispering leaves above it bend,  
And night-birds call, and moonbeams round it play,  
The voices of the smithy die away;  
When in the dusk the evening dew descend  
In silent slumber all its labours end—  
Its music mute, its ashes cold and gray.

J. G. F. NICHOLSON.

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